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VENOM VOLATILES IN POLISTES DOMINULUS (HYMENOPTERA VESPIDAE) WASPS INFECTED BY THE ENDOPARASITE XENOS VESPARUM (STREPSIPTERA STYLOPIDAE)

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Social insects have evolved a great number of co-ordinate defensive responses to possible hazards since for these insects the whole reproductive success depends on a single nest. Many studies have shown the existence of an alarm communication in social Hymenoptera and recently even in European wasps of the genus Polistes. Species-specific alarm pheromones in the venom are capable of recruiting nestmates and eliciting attack towards predators. Xenos vesparum (Stylopidae) is the endoparasite of Polistes dominulus. Infected wasps show both physiological, anatomical and behavioural modifications: they are sterile, smaller in size and show reduced fat bodies and ovaries. Recently it has been shown that stylopised P. dominulus are inactive, they do not defend the nest and early desert the colony forming extranidal aggregates. In the present study we analysed the venom volatile composition and we measured the venom reservoir size of stylopised P. dominulus compared with uninfected workers. Our results showed that the mixture of venom volatiles is quantitatively different in the two groups and that the size of venom reservoir in stylopised wasps is significantly smaller compared to that of uninfected ones.

KEY WORDS: Defence, endoparasite, venom volatiles, Xenos vesparum, GC-MS.